

CLAIMS

What is claimed is:

- 1 1. A computer-implemented method of managing memory of a data processing
 2 system, comprising:
 3 allocating memory objects in response to memory allocation requests, each object
 4 having an associated a plurality of addresses;
 5 storing type-identifier codes in association with memory objects, respectively; and
 6 responsive to a transient memory error at a memory address, identifying the
 7 memory object associated with the memory address, obtaining the type-identifier code
 8 associated with the memory object, selecting one of a plurality of recovery actions using
 9 the type-identifier code as selection criteria, and performing the one of the recovery
 10 actions.
- 1 2. The method of claim 1, further comprising storing the type-identifier codes within
 2 the memory objects, respectively.
- 1 3. The method of claim 2, wherein the type-identifier code is a program counter value
 2 from which allocation of memory is requested.
- 1 4. The method of claim 2, wherein an operating system manages resources of the data
 2 processing system for use by application programs executing on the data processing
 3 system, and a first type-identifier code identifies memory objects used by the operating
 4 system and a second type-identifier code identifies memory objects used by the
 5 application programs.

- 1 5. The method of claim 2, wherein the one of the recovery actions comprises
2 disregarding the error.
- 1 6. The method of claim 2, wherein the one of the recovery actions comprises
2 signaling an application program if the address of the memory error is associated with a
3 memory object allocated to the application program.
- 1 7. The method of claim 2, wherein the one of the recovery actions comprises halting
2 the operating system.
- 1 8. The method of claim 2, wherein the one of the recovery actions comprises logging
2 information that describes the memory error.
- 1 9. The method of claim 2, wherein an operating system manages resources of the data
2 processing system for use by application programs executing on the data processing
3 system, and a first type-identifier code identifies memory objects of a first type used by
4 the operating system, a second type-identifier code identifies memory objects of a second
5 type used by the operating system, a third type-identifier code identifies memory objects
6 used by the application programs, and for errors in memory objects associated with the
7 second type-identifier code, the one of the recovery actions logs information that describes
8 the memory error.
- 1 10. The method of claim 1, wherein the type-identifier code is a program counter value
2 from which allocation of memory is requested.

1 11. The method of claim 1, wherein an operating system manages resources of the data
2 processing system for use by application programs executing on the data processing
3 system, and a first type-identifier code identifies memory objects used by the operating
4 system and a second type-identifier code identifies memory objects used by the
5 application programs.

1 12. The method of claim 1, wherein the one of the recovery actions comprises
2 disregarding the error.

1 13. The method of claim 1, wherein the one of the recovery actions comprises
2 signaling an application program if the address of the memory error is associated with a
3 memory object allocated to the application program.

1 14. The method of claim 1, wherein the one of the recovery actions comprises halting
2 the operating system.

1 15. The method of claim 1, wherein the one of the recovery actions comprises logging
2 information that describes the memory error.

1 16. The method of claim 1, wherein an operating system manages resources of the data
2 processing system for use by application programs executing on the data processing
3 system, and a first type-identifier code identifies memory objects of a first type used by
4 the operating system, a second type-identifier code identifies memory objects of a second
5 type used by the operating system, a third type-identifier code identifies memory objects

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6 used by the application programs, and for errors in memory objects associated with the
7 second type-identifier code, the one of the recovery actions logs information that describes
8 the memory error.

1 17. An apparatus for managing memory of a data processing system, comprising:
2 means for allocating memory objects in response to memory allocation requests,
3 each object having an associated a plurality of addresses;
4 means for storing type-identifier codes in association with memory objects,
5 respectively; and
6 means, responsive to a transient memory error at a memory address, for identifying
7 the memory object associated with the memory address, obtaining the type-identifier code
8 associated with the memory object, selecting one of a plurality of recovery actions using
9 the type-identifier code as selection criteria, and performing the one of the recovery
10 actions.